

**Amendments to the Drawings:**

Replacement sheets of drawings are attached with corrections as required by the Examiner.

Attachment: Two Replacement Sheets

Annotated Sheet Showing Changes

### REMARKS

Claims 1-20 were presented for examination. Claims 1-8 and 18-20 have been canceled. Claims 9-17 are pending and are rejected. Reconsideration is respectfully requested.

#### Specification

The disclosure is objected to because of informalities and has been amended as required by the Examiner. Therefore the objections should be withdrawn.

#### Drawings

Corrected drawings, as required by the Examiner, are attached. Therefore the objections to the drawings should be withdrawn.

#### Claim Objections

Claims 1 and 15-16 are objected to because of informalities and have been corrected as required by the Examiner. Therefore the objections should be withdrawn.

#### The 35 U.S.C. § 103 Rejections

Claims 9-17 are rejected as being unpatentable over Ong et al. in view of Braithwaite et al. or Ryang et al. The rejection is respectfully traversed.

The attached Declaration Under 37 CFR Section 1.132 of Alexander E. Gash is incorporated herein by reference.

Both Ong et al. and Ryang et al. teach the preparation of nanostructured metal oxide powders through the use of *physical* entrapment of inorganic precursors in an organic gel matrix (e.g., swelled hydrophilic organic polymers such as polyethers, and acrylates) followed by high temperature removal of the organic gel network and decomposition of the precursors. The applicants' claim 9 recites a method of manipulating the chemistry of a solution to form an *inorganic* gel. I.e., the support structure of the gel is made up of a nanostructured network of inorganic oxide solid that is physically very different than the organic network utilized in this cited art.

The applicants method produces an inorganic monolithic nanostructured metal-oxide aerogel or an inorganic monolithic nanostructured metal-oxide xerogel, whereas Braithwaite et al. only gives powders. There is no teaching of monolithic parts with the method of Braithwaite et al.

Therefore the rejection should be withdrawn.

Claims 9-17 are rejected as being unpatentable over Imamura et al. in view of Braithwaite et al. or Ryang et al. The rejection is respectfully traversed.

Regarding Imamura et al. and Ryang et al., in both cases the mode and mechanism of gel formation is entirely different from that recited in claim 9 of the present application. In the references, a gel is formed through either the swelling of an organic polymer (Imamura) or the photo or thermal-induced polymerization of organic

monomers (e.g., acrylics) that crosslink to form a rigid gel structure. In both of these methods the organic component of the gel is used to *physically* entrap the inorganic sol component of the mixture. That is, the gel has entrapped a solution that contains dissolved inorganic precursors in it. Upon thermal treatment of this composite the organic component is burned away, the solvent evaporated, and the inorganic salt species degraded to the final *inorganic polymer* that takes the form of a powder.

In the applicants' recited method of claim 9, the organic component acts as a reagent that reacts and drives the *chemical condensation* of the inorganic precursors to a polymeric network. Quite simply, the applicants' method drives the formation of the network through manipulation of the solution chemistry and not through the *physical* entrapment followed by high temperature decomposition.

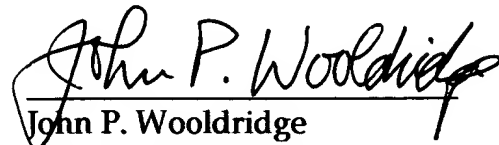
Another example of the differences in the method is the final forms of the inorganic polymer. Using the prior art cited yields only powders of the final product whereas the applicants' methodology leads to the formation of macroscopic monolithic single body pieces of the desired material as well as powders.

### Conclusions

It is submitted that this application is in condition for allowance based on claims 9-17 in view of the amendments thereto and the foregoing comments.

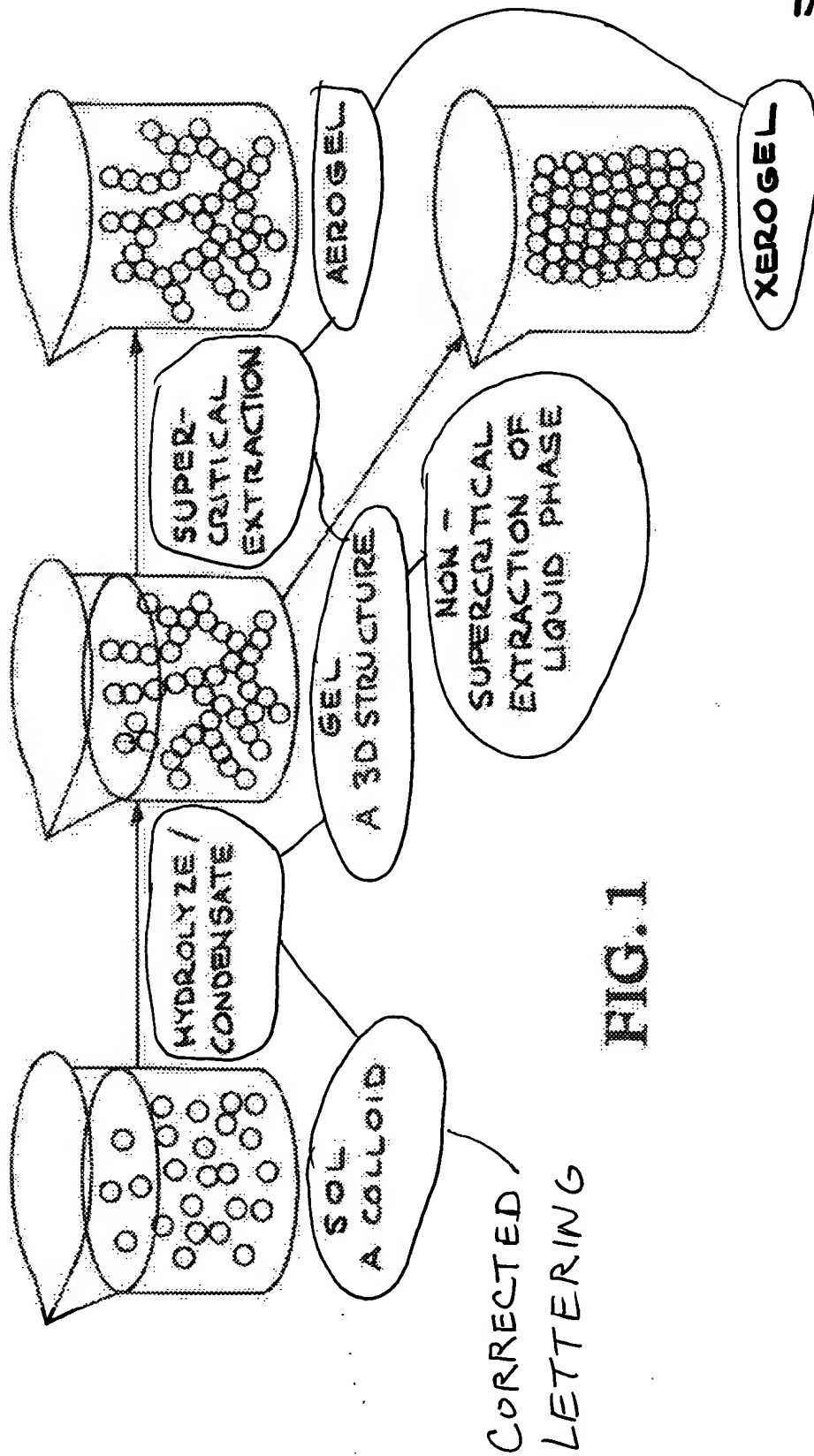
If any impediments remain to prompt allowance of the case, please contact  
the undersigned at 808-875-0012.

Respectfully submitted,

A handwritten signature in black ink, reading "John P. Wooldridge". The signature is written in a cursive style with a large, looping initial "J".

John P. Wooldridge  
Attorney for Applicant  
Registration No. 38,725

Dated: May 23, 2005





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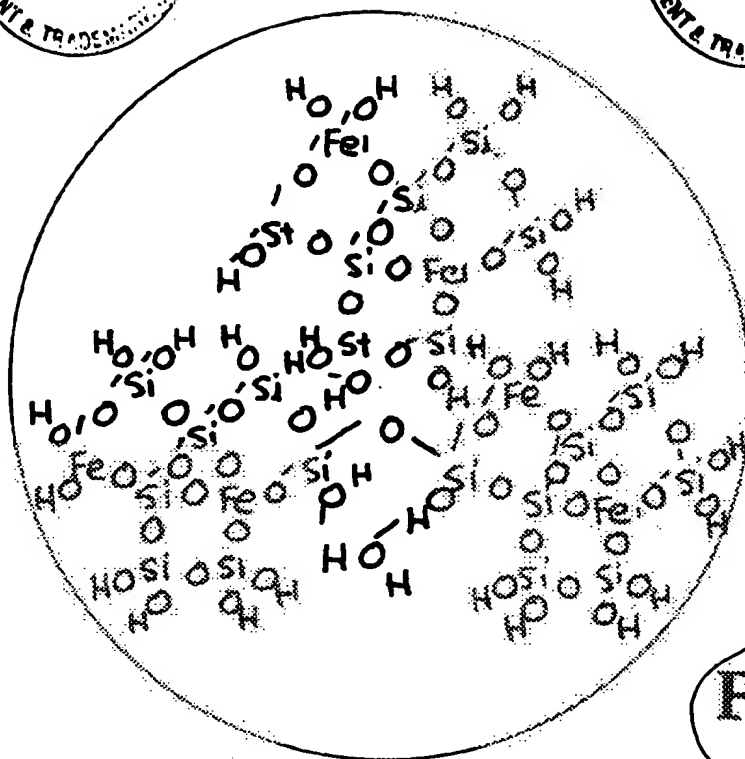
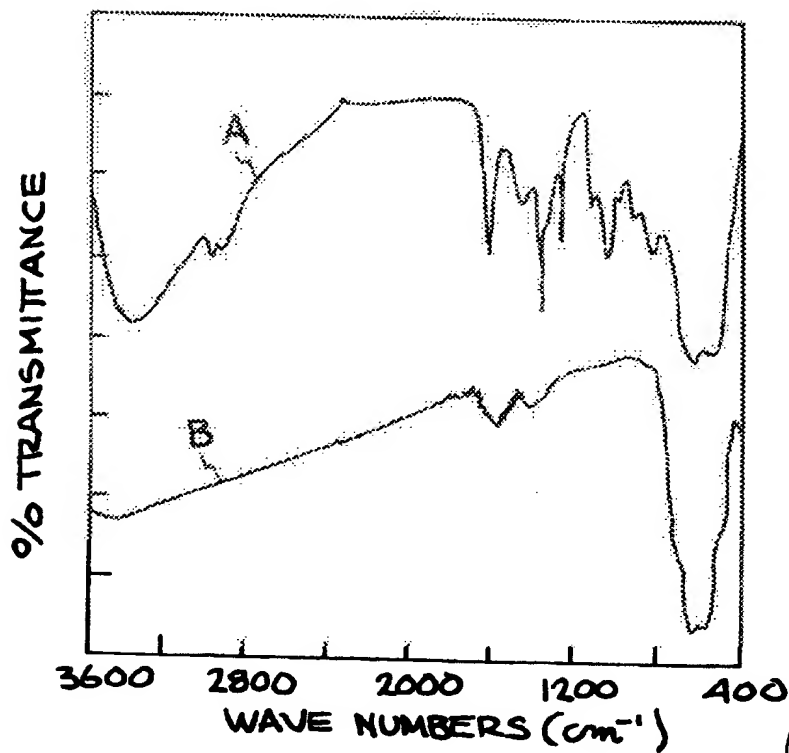


FIG. 2



CORRECTED  
LETTERING

FIG. 3